

BOLT REPLACEMENT PROCEDURE FOR LEAD KEELS

1. Visual inspection takes place of the bolts and extent of corrosion where replacement is required.
 2. Once the location of the bolts to be replaced is determined, the lead keel is placed horizontally at a level position and the bolts are marked.
 3. Utilizing a Harris-2H Tulip torch end with propane/oxygen as fuel, the lead is melted carefully away - vertically to expose the old bolt(s) – in the interior of the keel.
 4. The above process is repeated until all necessary bolts have been exposed and removed from the keel. The cavities are cleaned to ensure that no slag or impurities are present.
 5. If the old bolts did not have "J" hooks or T-sections, the new ones will be put in place with "J" hooks at the base by cutting in this addition area horizontally.
 6. The new 18-8 grade 316 stainless steel bolts are put in the location of the old ones and laid in place with our typical "J" hook configuration. Allow for some deviation in keel bolt relocation. *See note below.
 7. Once the new keel bolts are laid in place on the one side, our technicians then melt and fuse (lead burn) 3% antimonial lead around them. The new lead is brought up to approximately 720 degrees F. and slowly fused around the new keel bolts.
 8. This process is repeated where necessary and the lead is allowed to cool overnight.
 9. Once cool the next day, any rough fused areas are smoothed over using a 36 grit-grinding disc. West system epoxy is then applied on top and then faired into the body of the keel. In most cases, very little epoxy is used on the sides. A final coat of Introprotect 2000E is applied (which is an epoxy primer paint) to seal and protect. Please note that a minimum of 10 mils is required for a proper barrier coat.
 10. The keel is then positioned vertically and lead is puddled (fused) around each keel bolt on the root chord to ensure proper sealing.
 11. The keel is once again inspected and a hex nut and washer is threaded onto each vertical stud. The keel is then ready to ship in a vertical cradle/pallet
- *** Please note: Keel bolts may deviate ¼" to 3/8" when relocating.